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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,844	09/29/2000	Bryan R White	10559-165001/P8249	3643

20985 7590 06/11/2003

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EXAMINER

MONESTIME, MACKLY

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 06/11/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

22

Office Action Summary

Application No.

09/676,844

Applicant(s)

WHITE, BRYAN R

Examiner

Mackly Monestime

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Response to Amendment

1. The amendment received on May 7, 2003 has entered and carefully considered. Claims 1-16 are still pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7-9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher et al (US Patent No. 6,480,200) in view of Ajanovic et al (US Patent No. 6,374,317).

4. Fisher et al was cited in the last office action.

5. As per claims 1 and 13, Fisher et al substantially disclosed the invention as claimed, including a memory controller hub comprising: a cache adapted to store addresses of locations in physical memory available to the graphics subsystem for storing graphics data (col. 1, lines 58-61) and available to an external graphics controller hub to store graphics data (Fig. 1, Item No. 18).

Fisher et al did not explicitly disclose that the controller hub includes an internal graphics subsystem adapted to perform graphics operations on data. However, Ajanovic et al disclosed a memory controller which includes an internal graphics subsystem adapted to perform graphics

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operations on data (Fig. Items No. 110, 113; col 3, lines 45-47). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have implemented the memory controller hub of Ajanovic et al into the system of Fisher et al because doing so would provide a more flexible and expandable graphics system by allowing the memory controller to accommodate a plurality of interfaces such as graphics interface and interface controller.

6. As per claim 7, Fisher et al substantially disclosed the invention as claimed, including a CPU (Fig. 1, Item No. 10); a display device (Fig. 1, Item No. 24); a system memory adapted to store video data and non-video data; and a memory controller hub coupled to the CPU (Fig. 1, Item No. 12) and coupled to the system memory (Fig. 1, Item No. 14), the memory controller hub comprising: a cache adapted to store addresses of locations in physical memory available to the graphics subsystem for storing graphics data (col. 1, lines 58-61) and available to the memory controller hub to store graphics data (Fig. 1, Item No. 18).

Fisher et al did not explicitly disclose that the controller hub includes an internal graphics subsystem adapted to perform graphics operations on data. However, Ajanovic et al disclosed a memory controller which includes an internal graphics subsystem adapted to perform graphics operations on data (Fig. Items No. 110, 113; col 3, lines 45-47). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have implemented the memory controller hub of Ajanovic et al into the system of Fisher et al because doing so would provide a more flexible and expandable graphics system by allowing the memory controller to accommodate a plurality of interfaces such as graphics interface and interface controller.

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7. As per claims 2-3 and 8-9, Fisher et al disclosed a dedicated bus interface coupling to the graphics controller to the memory controller hub (Fig. 1, Item No. 22).

8. Claims 4-6, 10-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher et al in view of Ajanovic et al as applied to claims 1-3, 7-9 and 13 above, further in view of Surti et al (US Patent No. 6,496,193).

9. Surti was cited in the last office action.

10. As per claims 4-6, 10-12 and 14-16, Fisher et al further disclose a cache adapted to store addresses of locations in physical memory (col. 1, lines 58-61), but Fisher et al and Ajanovic et al did not explicitly disclose that the memory controller hub is configured to provide a block of linear, virtual memory address by graphics subsystem or graphics controller. However, Surti et al disclosed a method and apparatus for fast loading of texture data into a tile memory, wherein texture data are store in system memory in a tile format that allows an entire cache tile to be stored linearly in memory space (col. 2, lines 8-10; col. 4, lines 3-5, 47-51). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would not only allow the graphics engine to access memory faster without causing an excessive number of page misses in the memory subsystem; but also allow the graphics engine to take advantage of the high burst rate fills to load the cache, thereby enhance the processing speed of the system.

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Response to Arguments

11. Applicant's arguments with respect to claims 11-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bella Matthew, can be reached on (703) 308-6829.

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Any response to this action should be mailed to:

Commissioner of Patent and Trademarks

Washington, D.C. 20231

or faxed to:

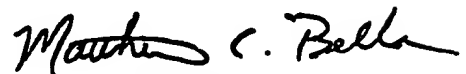
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, Va, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

Mackly Monestime

Patent Examiner



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

June 4, 2003